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The
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VOLUME 10 NOVEMBER, 1944 NUMBER 6

MEDICAL TECHNOLOGISTS NOW AND AFTER THE WAR*

By I. A. NELSON, M.D.

Director, Department of Pathology, Saint John's Hospital, Tulsa, Oklahoma

All technologies are being over-taxed today. It is sad to know that so many are perverted into War Necessities. We are conscious that we have been active in some phases of technology which so far our enemies have not turned into destructive channels. If "the history of all science is in essence the history of its methodology," as Burrows states in the preface to Jordan's textbook of bacteriology, we must feel inspired in perpetuating these methodologies. It becomes our particular concern when we hear people say they would like to go back to some imaginary simple life because there is too much science and too little goodwill toward man. We in the Medical World have an opportunity to foster the conquest of the material and organic earth while contributing toward the betterment of the collective and of the individual man.

Since my election to the Board of Registry for the Technologists, I have tried to learn more about technologists. In the first place a careful review of all the twenty-six texts of required reading as outlined in the Curriculum of Dr. Davidson of the Board of Medical Technologists, along with the collateral readings, showed clearly that there is a trend towards a unique technologist's literature in which your status as a profession and specialty stands out distinct

**Presented at the Annual Meeting of the American Society of Medical Technologists, June 12, 1944, Chicago, Ill.*

from the clinician and the interpreter. Each profession needs its own medium of expression and even though you are young you are developing yours.

Last Christmas my interest in such intensive study was getting satiated and naturally much of the reading was re-hash. Then "Fortune" smiled upon me. Mr. Oscar Stewart (who is here at your National Meeting and who has been a Rock of Gibraltar in my own and my brother's medical careers), gave me a year's subscription to the magazine "Fortune." This opened up a new field of reading. Many articles deal with employer and employee and post-war world-wide problems. I bought other publications at news stands which seemed to follow these lines of speculation. These led me to information on the work of the Human Engineering Laboratories. This organization, which is under the direction of Dr. Johnson O'Connor, is really a Research institution trying to help us find what we are good for. There is a popular book on some of this work by Margaret F. Broadley called "Square Pegs in Square Holes." I think there is already enough progress along this line of investigation to contribute to our present and future adjustments. In the first place let me caution you that this is more of a Research on a long-time protocol and not a vocational guide. There are some violent clashes between what you think you can do on the basis of your own or your parents' "interest" and what the aptitude tests indicate. The approach is not the same as the I. Q. tests, which got a boost in World War I. Aptitude Tests after all are not so entirely new nor the exclusive property of a few. The Armed Forces today are adapting some to war and even post-war requirements.

In the first place we can start using some tests as screen tests. Often enough in our work it is easier to determine what is negative than to determine what is positive. A cautious acquaintance with the meaning of measurable aptitudes will help you encourage the applicant who lacks some essential aptitudes out of considering this type of work as he will be a trouble maker in spite of his intentions and good will. To show why it is harder to say a person will be a success in this field, we have no tests to determine whether a given inquirer has any so-called common sense or any urge to really work.

Such an acquired knowledge may also help you define your-

selves to the world. The Clinical Pathologists understand how discouraged you feel at being called "nurses," since they are at times introduced to the layman as: "Ah—the laboratory man."

An interesting finding is the value of vocabulary. No one on earth is born with any form of speech. This is one thing that must be ACQUIRED. It will surprise you to learn that "Vocabulary" is the most consistent measure of success in America today. And if you happen to be born with that "inner attitude towards life" called subjective, it may take you years of vocabulary building before you will comply with your program committee and write a paper. Even though you have found joy in your work and have something to give to others, you—not being of the salesman type—will hesitate to write. Some of you may overcome this handicap by a broad mastery of a technical vocabulary and by specializing in some department of medical technology, others by an all-round familiarity with the words of life, of dress, of food, custom, fashion, etiquette, etc. But beware of becoming a chatty girl with small talk in the laboratory. Some such persons probably have an inborn creative imagination which is contributing toward their happiness and must not be belittled, but you had better help direct such people out of the laboratory.

Try to master that vocabulary which contributes to your writing (or dictating) of articles for your publications and toward your professional security.

Dr. Montgomery, Chairman of the Board of Medical Technologists, tells us that many of the errors in the written papers are incomplete sentences, in which the student fails to specify weights or volumes. Even though most of the theoretical teaching is not done by you, and even if only about 3 out of 1,000 who receive your practical teaching fail, still you can supplement the theoretical lectures by insisting more on complete sentences when students work with you in the laboratory. Also you can encourage students to use that portion of the Curriculum library which Dr. Davidson has called "reading for fun" with the conscious effort of increasing their vocabulary. While I am on vocabulary, it might interest you to know of the double effort that is growing in regard to the use of English. There is a simplified form called Basic English which the peoples of the world could begin to use and in which you should

learn to express yourself if you travel. In addition there is a definite emphasis on a more abundant vocabulary and semantics for those of us who are aware of our opportunities in a changing world. Is it not possible that even though you may be a better technician than your Director, still with his larger vocabulary he can understand you and your work and thus maintain a natural leadership?

There are certain aptitudes such as accounting or jotting down or keeping records or even "writing for fun." You would be surprised to know that this is a very useful and fortunate aptitude for scientific workers. Dr. McNaught, also of the Board of Medical Technologists, is going to speak to you and since it is no secret, you will be interested to know that he corresponds with 300 service men and does all the actual V-Mail writing on the typewriter himself.

Finger and tweezer dexterities are almost essential for technologists. After I had read some of this literature I noticed one of my students handle several test tubes at once with the greatest of ease. When I remarked about it, she replied that she had been told at the University of Minnesota, where they are using some of these aptitude tests, that she had made a good showing in these two tests. She had never bragged about this and seemed to get an innate satisfaction out of exercising this talent.

We can have too many unused aptitudes and too much "acquired" skill. It is becoming evident that those of us who try to conform our lives to "acquired" instead of innate activities are not so happy. We tend to be jealous of those who do things more easily and more accurately than we. Innate aptitudes give us an ease of execution which permits our conscious mind to shift with all sorts of interruptions and immediate demands without affecting what we are doing. Such a composure may seem to you to be the result of what you call "habit" but if this is an acquired, drilled habit, it is liable to fail you under stress. This does not mean that our older conceptions such as the need for work, the need to grow up, and the need of schooling will become discarded. But if you can become conscious of a matured innate aptitude in yourself, this very knowledge is its own reward. Beware of unused aptitudes, as these are said to demand some form of expression. You may satisfy these by extra-mural hobbies.

There have always been those leaders who seemed endowed with that understanding which helped them pick their employees from among those who had worked "from the ground up." Today labor and politics and a changing world confuse and thwart many natural qualities, so maladjustments have become a challenge. Reports from over 200 big industries today show that merely shifting employees according to aptitudes has improved both production and happiness.

At the present time various schools and clinical pathologists are forced to accept ANY applicant. Even so, we owe it to these people to help them find themselves. One Clinical Pathologist said he did not care how much "college an applicant had," he could tell more about the girl if he used her on two weeks' probation in which she mingled with various technologists and departments. One of your own members considers "horse-sense" as the most important quality, and probably she could place workers anywhere in the world if she were given the job. You know Rockefeller was quite successful in picking his men and he used neither "college" nor modern "aptitude" yardsticks. If you happen to read the book called "Square Pegs in Square Holes," you will be impressed with the failure of mankind to formulate a test for "common-sense" and yet all of you know all about it. Years ago I used to say that we could go to college and get formulated knowledge but I had found no courses in "Wisdom." These considerations should make us modest and cautious and tolerant towards what seems to be misplaced finite judgments of others.

In summary let me say that this emphasis on aptitudes, vocabulary, and common-sense is a personal interest and not an official program of the Board of Registry to displace our present collegiate minimum standards in the basic sciences. It is my hope that these tests will gradually evolve in our own laboratories just as they are developing in industry and the Armed Forces.

My own experience is scant, but at least I have submitted to the tests at the Armour Institute of Technology here in Chicago. When I took the tests there were some other problem children whose anxious mothers had forced them as lambs to the slaughter —as it were. Unless you take such tests, you do not know what a slaughter it might be. My grades are my secret, but I made only 10 on an aptitude which I surely could use and for which I thought

I had compensated in the past, little realizing how treacherous an "acquired" skill may be. I was reminded of what Ethel Barrymore meant when she said, "You grow up the day you have your first real laugh—at yourself."

I want to compliment you on your National growth and feel that since you are as big as the American Society of Clinical Pathologists and have a bigger reserve of membership to draw from, it has been a challenge and an honor to try and suggest that you start reading about measurable aptitudes, vocabulary and common-sense in Technology for a greater usefulness and personal happiness.

BLOOD BANK PROBLEMS*

By H. L. WALLIN, M.D.

Director, Blood Bank, Cook County Hospital, Chicago, Ill.

The use of blood as a therapeutic measure, dates back to the time of the Egyptians and Romans and probably as far back as the origin of medicine itself.

The early history relating to the transfusion of blood is very vague because of the confusion existing between the terms "ingestion" and "transfusion" of blood. It was believed that blood had curative power and blood was used as a bath as well as a drink. It was customary at that time for part of the audience at the bullfight to rush into the arena and to drink the blood of the fallen gladiator so that they might become as strong and powerful physically as the gladiator.

One of the earliest accounts of blood transfusions is that of Pope Innocent VIII, in 1492. Three young boys were used as donors and as the story goes, all of the boys died as well as the Pope.

It is hard to conceive how blood transfusions could have been given without knowledge of the circulation of the blood, asepis, coagulation or blood groups.

The indications for blood transfusion at that time were, insanity, melancholia, ulcers, epilepsy and even marital discord. It was believed that blood from a good and gentle wife might cure her husband's stubbornness and hot temper.

The indications now are about the same as prescribed by Leisrink about 70 years ago. Transfusion is indicated in all pathological conditions when the blood, in quantity or quality is so altered that it is unfit to fulfill its duties.

Now it is not uncommon to give as many as 10 or 12 pints of blood in a case of major surgery.

Organization of a blood bank should not be undertaken unless the institution is large enough to demand frequent transfusions. Several nearby hospitals may co-operate to form a pool or central

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bank. When the hospital is not large enough to support a blood bank, a blood donor's registry should be established and accurate records kept, so that blood may be available upon short notice. The major problem in the operation of a blood bank is that of balancing the supply and demand of blood so that even the most rare types of blood will be on hand when needed. However, this is almost impossible, for no matter how large the bank, at certain times there will be a shortage of Type AB and B and perhaps A, so that universal donor blood O must be used.

Blood may be furnished by voluntary donors composed of the relatives and friends of the patients or by paid donors. There are blood banks in which the donors are paid, a few each day, just enough to supply the demand for blood and the patients are charged for each transfusion with a small profit for the blood bank. Some blood may be had by performing therapeutic phlebotomy. Placental blood may also be collected. If the demand for transfusions is not steady and uniform, much blood may be lost from over age.

The blood bank should have an ample supply of trained personnel to insure safe and continuous operation of the blood bank 24 hours per day.

The cleansing of all the apparatus is of the utmost importance if certain types of reactions are to be avoided. Bacterial contamination must be strictly guarded against. The refrigerator should be of reliable make and sufficiently large to accommodate a good supply of blood. Plasma if drawn and bottled under aseptic conditions, need not be refrigerated. In case of refrigerator failure, dry ice may be used in the emergency until the proper repairs can be made.

The blood supply should be used if possible, within a period of seven days, since the older the blood becomes the less useful it is. Hemolysis sets in almost immediately after drawing regardless of the type of anticoagulant or preservative used. Trauma to blood through unnecessary handling and exposure to air should be avoided.

Reactions are a very important problem in the blood bank.

1. Pyrogenic reactions are most frequent, but usually not fatal and may be prevented or greatly reduced in number by utmost care being used in the cleansing and sterilizing of the drawing, storing and administration equipment.

2. Allergic reactions, usually transitory and need very little treatment. Accurate history of both patient and donor may prevent some allergic reactions.

3. Cardiac reactions, usually fatal and should be guarded against by careful examination and evaluation of patient's ability to receive blood. Too rapid flow of blood during transfusion, or too great a volume of blood or other fluids are the principal causes of cardiac reactions.

4. Incompatibility, reactions are usually fatal and may occur through error in typing or cross-matching and improper labeling.

The making of plasma may become a problem if not carefully done. All plasma should be pooled. About 10 donors should comprise a pool.

Typing serum is a source of trouble if used too long. Fresh typing serum may be prepared each week from the stock of blood in the refrigerator and may be colored for identification.

The keeping of records is of great importance in a blood bank. Each transfusion should be numbered and the donor's name recorded and the age and general condition of blood noted.

The name of the technician who prepared the blood, should be a part of the record.

All orders, requests and data should be written. A complete report of the results of the transfusion, should be returned to the blood bank, including any statements regarding reactions.

An individual account of the transfusion each patient receives and also the names of the donors should be kept.

The new international classification of blood by letters instead of numbers should be used in order to avoid errors.

Each blood bank may have special problems of its own which must necessarily be dealt with as the situation arises.

IMPORTANCE OF LABORATORY RECORDS

By JOHN W. WILLIAMS, M.D.

State Board of Health, Dover, Delaware

Full advantage seldom is taken of laboratory reports. They usually are kept only insofar as they are reports to the physician. They usually are not systematically recorded for anticipated future use. Many assembled records would prove valuable in epidemiological programs, research, the planning of future activities and as a basis of passing and enforcing laws.

This frequent lack of adequate recording not only exists in hospital laboratories but also in public health laboratories. Of sixty-seven annual reports of health departments studied there was so little systematization of recording that less than ten reports presented figures in such a way that comparison was possible. Data may be recorded by month, color, sex or organs affected, by the fiscal year or calendar year. Occasionally analysis of hospital laboratory examinations are made for the purpose of determining costs.

Tables I and II are examples of what may be accomplished if recording is adequate and systematized. They are the result of analysis of records kept by the laboratory director of Rhode Island over the ten-year period 1933-44 (1).

TABLE I

Per Cent and Cases Showing Streptococcus Hemolyticus in Throat Cultures.

	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42
Str. Hemolyticus	45.8	36.6	41.4	40.3	6.7	11.6	16.1	18.9	14.2	8.8
Number of Cases.....	273	213	295	196	195	190	180	189	212	181

TABLE II

Per Cent and Cases Showing Streptococcus Hemolyticus in Throat Cultures by Age Groups.

When cases are tabulated as age groups the following figures are obtained:

	— 1 to 15 Yrs. —		—16 to 30 Yrs.—		31 Yrs. and Over	
Year	Per Cent	Cases	Per Cent	Cases	Per Cent	Cases
1933	52.3	149	41.0	61	34.9	63
1934	43.4	106	25.9	54	34.0	53
1935	48.5	171	28.8	59	33.8	65
1936	56.8	81	34.5	58	22.8	57
1937	6.2	32	10.1	69	4.2	94
1938	20.5	72	7.0	57	5.0	60
1939	9.5	42	25.8	62	11.8	76
1940	10.0	50	20.0	55	19.0	84
1941	14.8	54	15.3	72	12.8	86
1942	3.7	54	15.2	59	7.4	68
1933-42	35.6	812	22.1	606	17.1	706

The data shows a decrease in per cent of throat cultures showing the streptococcus hemolyticus over the period especially in the younger age group. This decrease may be due in part to health measures instituted and in part to the sulfa drugs. Decrease in these more virulent organisms may account for fewer and less severe epidemics and may be a factor in explaining a decrease in such diseases as rheumatism.

Methods of standardization used universally would be of value. Importance of standardization can be emphasized by study of the venereal disease reports by the states to the USPHS for the first four months of the fiscal year 1943-44.

TABLE III

Stages and Total Cases of Syphilis

	Primary &	All Other	Ratio	Total	Classified	
State	Secondary	Stages	2 to 1	Cases	Total	%
Alabama	864	3,015	4.9	5,895	3,852	64
California	1,728	8,823	5.1	10,789	10,551	98
Connecticut	120	782	6.5	1,071	902	74
Delaware	34	120	3.5	321	154	48
Florida	1,094	8,700	8.0	11,044	9,794	89
Maryland	545	1,515	2.8	5,755	2,060	36
Massachusetts	370	1,273	3.9	1,643	1,643	100
North Carolina	1,065	3,023	2.8	4,088	4,088	100
Pennsylvania	570	2,761	5.0	4,560	4,331	95
United States	24,907	108,001	4.3	149,744	132,908	89

Wide variations are apparent. A low ratio would indicate increase in syphilis or increase in cases found. It is estimated that anywhere from one-fourth to one-tenth of the number of cases of syphilis is recognized as primary and secondary. The wide variations shown in Table III are excessive. This probably is due to differences in interpreting assembling and recording data. An example of the striking differences which may result when standardization is lacking is illustrated by the State of Delaware. In this state in the fiscal years of 1937-38 and 1938-39 positive laboratory reports on specimens of bloods submitted were counted as cases of syphilis, in 1939-40 and 1940-41 duplications were weeded out, while since October 1, 1941, only reports from physicians have been counted.

It is estimated that one to two examinations per annum per person ordinarily will be performed by laboratories of the country. Of these examinations hospital laboratories should perform at least 90 per cent. The magnitude of this business is obvious. The necessity for a central agency for the study of figures, set-ups and favorable and unfavorable conditions which may exist is apparent. Co-operation and a more adequate allocation of tests could be determined by such means. A better understanding between hospital and public health laboratories could be established. No agency able to handle this problem now exists. It is possible that the laboratory section of the USPHS might be a point of departure for such a project. New York State in its evaluation has taken a stride in this direction but many states would find difficulty with such a project because of limited size.

In summary, the necessity of better records and reports as a point of departure in developing better laboratory organization and co-operation is emphasized. This is emphasized by example. The advantage of a central agency for collecting and analyzing figures is stressed.

(1) Staff, E. J.: A Study of the Bacterial Flora and Mucous Membrane of the Throat. Thesis under author. Department of Public Health. Mass. Inst. of Technology. June 5, 1944.

WE AND THE WAC

A Message to You Women Medical Technologists from Your President

By ROSE MATTHAEI, M.T. (ASCP)

By this time I am sure that you have all heard that the Army is going into the business of training women for our profession. As their length of training is not as long as ours, and as their requirements are not as high, at first glance, it looked bad to me. That was my immediate reaction on reading that the WAC was enlisting high school graduates ("from the upper half of their class," nevertheless, and "with a special interest in this type of work") for training as Laboratory Technicians, and after a "blitz" course was placing them in Army General Hospitals.

But now, after being oriented on the entire WAC Medical Technician program (by the way, they call anybody from a Psychiatric Social Worker to a Medical Stenographer a "Medical Technician"); after learning of the dire need for these women and knowing that the job of caring for our battle casualties must be given first consideration; and knowing that we cannot supply the full quota of necessary trained personnel; realizing that the program must go on whether we agree with it fully or not; and seeing that their requirements for trained personnel are higher than I expected; I feel differently.

Feeling that many of you may have just received bits of information on this important program, I wish to explain it to you as I see it, and let you know what the consequences, as far as we are concerned, may be.

First of all, most of you know that our casualty rate has been pretty high since D-Day, and that the job of caring for these men who are fighting our battles is one that must and will be done. But it seems that there is a scarcity of trained Medical Technologists in our Army hospitals. That is because so many of the men whom the Army had trained for this work, have been sent overseas to care for the wounded on the field of battle and in base hospitals

behind the lines. In view of this, Major General Norman T. Kirk, the Surgeon-General of the Army, has asked for twenty-two thousand women to serve in our general hospitals (this figure includes all types of Medical Technicians, not only Technologists to "man" the laboratories).

And the fact that the term Medical Technician includes that all-important person, to us, at least, the Medical Technologist (or as they have it listed, Laboratory Technician), makes the program of interest to us.

I visited the local Recruiting Office, and after talking with the Officer in Charge, was told that the Army Medical Department would naturally be delighted if all women applying for assignment as Laboratory Technicians were trained in this work. And when a trained Technologist does apply, and her transcript is duly certified by the Officer Procurement Division as being one that would qualify her for direct assignment, she is immediately placed in an Army Hospital Laboratory after completing her Basic Training. (Basic Training is the first six weeks an enlistee spends at the WAC Training Center where she is taught the rudiments of Army life.)

But it seems that not many women from our profession have gone into the service; not enough to fill the need, at least, so the Army must train enough Technologists to fill the vacancies now existing in the hospitals. So it has set up its own school for training women in the basic principles of laboratory work. Listed below is the curriculum followed during the sixteen week training period (broken down it means sixteen 52-hour weeks of pretty intensive training, I would say):

LABORATORY TECHNICIAN COURSE

Subject	Hours (approx.)	Subject	Hours (approx.)
General Laboratory Information	11	Gastric Analysis	16
Hematology	96	Blood Chemistry	76
Chemistry	40	Milk, Water, and Sanitary Chemistry	20
Urinalysis	80	General Bacteriology	32
Serology	50	Bacteria of Medical Importance	135
Blood Grouping	11	Examinations, Tests, and Inspections	50
Parasitology	108	Open Time	52
Pathology	8		

Some time that seems disproportionately short probably means that work done after training period will be under close supervision by trained personnel.

It can be seen that though these women may not get the extensive amount of work we received in our twelve months of training, nor will many of them have the good fortune of our academic background, nevertheless, in such a sixteen week training period, they will manage to assimilate a great deal of knowledge that will make them valuable assistants in any laboratory.

For both the civilian trained and Army trained laboratory Technologist, the on-job experience gained in an Army Hospital will be very valuable. In the larger hospitals they will work with some of the best men in the field, and too, there is always that chance for doing special work which only a branch of the service, such as the Army, can provide.

Now let us weigh carefully what the post-war consequences of this program may be as far as our organization is concerned. For it is easy to see that there will be a great many more laboratory technologists in the post-war world than before. How will it affect us?

First of all, as a member of the American Society of Medical Technologists, I am anxious that we grow in size and strength. At the same time, I am equally anxious that we maintain our standards at least on the level they are now, or raise them. What policy, then, should we adopt toward a woman who has served her country well, perhaps a great deal better than many of us, and at the same time has gained valuable training and experience in our line of work? Though she may not possess our academic background, she may be able to stand right beside us in a laboartory and do almost equally good work. Wouldn't it be far better for us to try in some way to assimilate this group, to encourage them to acquire, though belatedly, the requirements for registration, to take advantage of the G. I. Bill of Rights in the matter of college training, rather than to attempt to crowd them out of the field of our profession.

Below is what the Harris County Society of Medical Technologists (Texas) has adopted as their policy in the matter, and submits it with the recommendation that other local and state societies, together with the American Society, adopt it also.

Be it resolved that the Harris County Society of Medical Technologists adopt the policy of supporting the current WAC Medical

Technician Program:

1. By encouraging eligible young women to enlist for the training and experience that their service as an Army Laboratory Technician will give them.
2. By assuring women who are serving as Laboratory Technicians in the Army that upon their return to civilian life, the Society will welcome them as members provided their training and on-job experience has been such as will enable them to meet all Registry requirements and pass the required Registry examinations.
3. By encouraging discharged WAC Laboratory Technicians to partake of the educational opportunities offered by the G. I. Bill of Rights in order that their academic background will be such as to make them outstanding members of our post-war profession.
4. By assuring discharged WAC Laboratory Technicians that the Society will gladly lend its full strength and co-operation in helping them secure part time or full time work while they are preparing for their Registry examinations.

We feel that in the post-war world, ours is a profession that will grow in strength and size due to the impetus given the Medical profession by the war. For both the trained and the untrained person who is interested in this profession, we feel that the current WAC Medical Technician Program will be of great benefit. For the untrained woman, it offers an opportunity for training and on-job experience with possibilities of post-war college training. For the trained technologist it offers an opportunity for a great deal of diversified work as well as a chance at specialization. For both, there is an opportunity to be of definite service to their country.

For the above cited reasons, the Harris County Society, a branch of the American Society of Medical Technologists, heartily recommends that the above policy be nationally adopted in order that the women of our profession may render valuable service both to their country and to their profession.

Respectfully submitted,

Mrs. Hazel Scott Marcuse, M.T. (ASCP)
Secretary, Harris County Society
of Medical Technologists.

I feel that the above resolution is a just one and only hope that it will encourage young women to enlist for this type of service. I feel that, in the long run, our organization will benefit, if, as a whole, it falls in line.

I should like to make clear one other point. That is, that these women are not receiving commissions; they are going into the Medical Department as enlisted personnel. And there is a reason for that. The Army explains it in this manner: the women being enlisted for psychiatric work and other fields who have backgrounds in their own work just as outstanding, and in some cases, more so, than ours, cannot all be commissioned, so the trained laboratory technologist cannot be given a commission at this time without also doing the same for all the others. So, at the present time, the WAC Medical Technician Program does not include commissions for any (ratings as high as Staff Sergeant, Third Grade, may be earned).

However, past experience with the different branches of the service has been this. If a Bill is passed that grants commissions to any one group of people with certain qualifications, those within the service stand just as good, if not perhaps a better, chance of getting them.

This is the Medical Technician Program, with reference to our profession, as I see it. I hope that I have explained the various phases in such a manner as will dispel any doubts you may have had concerning its value.

A MODIFICATION OF WINSLOW'S METHOD FOR AMYLASE (DIASTASE)*

By H. S. McGILLIVRAY, JR., M.T.

Charleston, S. C.

The original method as taken from Gradwohl's Clinical Laboratory Methods and Diagnosis, 2nd edition, page 111, is given. Modifications are in parentheses.

Reagents:

1% Sodium Chloride Solution: Dissolve 1 gm. sodium chloride (Merck's reagent) in about 50 cc. of distilled water and dilute to 100 cc. with distilled water. (Mix thoroughly! Date container which must be *clean*, stopper tightly, and make fresh after three weeks.)

0.1% Soluble Starch Solution: Dissolve 100 mgs. of soluble starch (Merck's reagent) in about 50 cc. of warm distilled water and dilute to 100 cc. with distilled water. (Mix thoroughly, transfer to *clean* container which has been dated and tightly stoppered. Let stand overnight and use clear upper part of solution for test as all starch particles do not go into solution. Make fresh after three weeks.)

Gram's Iodine: (Found too weak. Add 4 drops of Lugol's solution to 9 cc. of distilled water and mix. Make this fresh on day of test.)

Equipment:

10 small test tubes. (10 thoroughly cleaned standard Kahn tubes are satisfactory.)

(1 suitable rack for small tubes.)

Two 1-cc. pipettes graduates in 0.1 cc. (A 10-cc. Folin-Wu pipette graduated in 1 cc. may be used for pipetting the salt solution in place of the second 1 cc. pipette.)

One 2-cc. volumetric pipette. (A 15-cc. Folin-Wu pipette graduated in 1 cc. will save time pipetting the starch solution.)

Water-bath.

Technic:

**Presented at the Annual Meeting of the American Society of Medical Technologists, June 11, 1944, Chicago, Ill.*

In a series of 10 small test tubes place 1 cc. of 1% salt solution. (Put 1 cc. of the salt solution in *each* of the standard Kahn tubes arranged in a series in a suitable rack.)

Add 1 cc. of urine to the second tube. Blood serum or whole blood may be used. (*Clear* and *not highly colored* urine or serum are much to be preferred for the test. Excessive bile or hemolysis interferes with reading.)

Tube 1 is the control and receives no urine, serum or blood.

Continue through the series of tubes, discarding the extra cc. from the last tube. (After pipetting 1 cc. of the urine or serum into the *second* tube, which gives a mixture of 1 in 2 cc., draw this mixture up into the 1 cc. pipette then blow out. Repeat several times for complete mixing. Next transfer 1 cc. of this mixture to third tube. Mix as before. Continue in this manner through the remaining tubes and discard the extra cc. from the last tube.)

To each tube, add 2 cc. of 0.1% soluble starch solution. (Mix each tube by inverting on *clean* thumb or forefinger.)

Place in water-bath at 37° C. for 30 minutes.

Add 1 drop of Gram's iodine to each tube. (This is too weak and entirely unsatisfactory. Instead, add at least 3 or 4 drops of the freshly made iodine solution described above under reagents, to each of the 10 tubes and mix by inverting on a *clean* thumb or forefinger. Read at once by looking through top of tube against a white background. Control should show *distinct* blue or purple color if reagents are right. Repeat reading after standing five minutes. This often shows a clearer end-point.)

Observe the tube containing the smallest amount of urine (or serum) which shows no blue color. (Blue or purple color in the unknown tubes may be faint to strong but should be distinct.)

The *quantity* of urine, blood serum, or whole blood in each tube will be: Tube 1, none; tube 2, 0.5 cc.; tube 3, 0.25 cc.; tube 4, 0.125 cc., etc.; each tube containing just half as much as the preceding tube.

The *dilution* of urine, blood serum, or whole blood in each tube will be: Tube 1, none; tube 2, 1 to 2; tube 3, 1 to 4; tube 4, 1 to 8, etc.

Calculation:

The units of diastase (amylase) may be calculated in either of

two ways: If the *quantity* of urine, blood serum, or whole blood is used the calculation is $\frac{2}{\text{cc. used}}$; or if the *dilution* of urine, blood serum, or whole blood is used, the calculation is 2 X dilution.

Example:

Tube 5 contains the smallest amount of material which shows no blue color. Tube 5 has 0.025 cc. of the material in it. Therefore $\frac{2}{0.0625} = 32$ units of diastase (amylase).

Using the second method: Tube 5 has a dilution of 1 to 16, therefore $2 \times 16 = 32$ units of diastase (amylase).

Normal urine figure is from 8 to 32 units, while that for blood serum of whole blood is from 8 to 64 units.

Interpretation:

Excretion is decreased in nephritis and is greatly increased [to 100 to 200] in most cases of acute pancreatitis.

The quantity is increased in the blood serum or whole blood in diabetes mellitus, in nephritis with renal insufficiency and markedly in severe pancreatic disease. (Also is definitely increased in most cases of parotitis.)

RESUME OF SCIENTIFIC EXHIBITS
American Society of Medical Technologists, June, 1944

C. M. KORTUEM, *Chairman*

Soliciting exhibits from members of the American Society of Medical Technologists for the annual convention in Chicago, 1944, the common questions asked were: "What are the objectives of conventions? What do Medical Technologists exhibit?"

Many technicians do not have the opportunity of attending society conventions. The plan to present a resume of exhibits that have been offered at a society convention, may serve as a seed for ideas in future convention exhibits.

Individual members and affiliated societies of the American Society of Medical Technologists set up their own exhibits. The objective was to present to the conventionites a new or an old problem with various techniques. These presentations usually invoke exchange of ideas and create solutions to problems which arise in or from the subject exhibited.

"Requisites of Basal Metabolism" showed graphs and charts of actual basal registrations for various sized subjects, from which the question was raised. "How many normal standards must be taken into calculation when determining the metabolic rate?" Jessie K. Lex, the author, answers these and other questions in her book, "Metabolism Techniques." (Prize Award.)

Laboratory problems regarding the maintenance of a blood bank in a small hospital were solicited by the exhibit, "Blood-Bank, Sherman Hospital, Elgin." Among the articles on display were apparatus for donor set, plasma aspirating set and a vaco drip showing fine mesh filters for blood or plasma. Methods were described and discussed for storing and preservation of material. Due to shortage of extra equipment and being desirous of including the list of all necessary articles to complete the exhibit, Dorothy Laestar placed on the exhibit table a placard (Plate 1) describing the absent equipment.

The Xenopus Laevis was brought to the exhibit by Mr. L. H. Herring and created actual interest because the method and tech-

niques of inoculation were demonstrated. The visual education left no doubt in the mind of the conventionite as to the equipment and the techniques necessary for the care and use of the clawed frog for the early diagnosis of pregnancy.

The Tulsa, Oklahoma, Society of Medical Technologists sent pictures and newspaper clippings mounted on cardboard posters. This exhibit disclosed their enterprise in the war effort, namely, of maintaining and operating the blood bank for the Civilian Defense Office of their vicinity.

The New Hampshire group of Medical Technologists displayed thirty paintings 16x20 inches of actual blood cells, drawn to scale. The colors were exact duplicates of the actual stain and their transfer to the art paper was the work of a true artist as well as an excellent technician.

The Wisconsin group of Medical Technologists presented four subjects of interest to every technician. Namely:*

1. Hematology set up by Estelle Downer consisted of stained slides of sternal puncture smears in normal and blood dyscrasias. To complete the picture, a card containing the full report of the examination of the circulating blood accompanied each slide made from sternal puncture of the same patient.

2. A chart showing chemical reactions of sugar and the non-protein nitrogen in various diseases was presented by the department of chemistry of the Milwaukee City Hospital, under the supervision of Grace Ballard. Also a graph showing correlation between the determinations (Chart 1) of Serum Bilirubin and Serum Icterus Index.

3. Bacteriology was presented by an interesting and informative chart (Chart 2), "Cat Bite and Scratch Wounds with Consequent Pasteurella Infection of Man." This exhibit was compiled by Marion Tully from the Columbia Hospital, Milwaukee.

4. Marion Anderson from Mindale Sanatorium, Milwaukee, arranged two charts (Charts 3 and 4) that show percentage distribution of positive cultures of the bacillus of tuberculosis from Gastric Aspiration.

The Nebraska Society of Medical Technologists displayed a book compiled by their Committee of Education. This book contained questions taken from examinations held by the Board of Registry of Medical Technology. The purpose of this book being

*This exhibit was awarded the prize offered to Societies State and Local.

a service to qualified candidates of the profession of Medical Technology.

Scientific Exhibits by invitation were:

"Laboratory Techniques in Tropical Diseases," which were presented through the courtesy of the Chicago Medical School and supervised by Oscar Felsenfeld, M.D., M.S., D.T.M.

"Thin-Thick Smear Technique for Malaria Diagnosis" was set up by the United States Marine Hospital and demonstrations were by the Misses M. Hanley, M. Chaderjian and A. Light.

"Malaria." This consisted of photos and maps disclosing areas and sources of infection together with pertinent information accumulated by the American Medical Association, Chicago, Illinois. "Diseases Transmitted from Animal to Man" was also set up by the American Medical Association. Observation of this exhibit would be necessary to appreciate the extensiveness of the material used in its compilation.

The details for "Laboratory Diagnosis of Tuberculosis" was condensed and displayed in an illuminated box arranged by J. M. Kloeck, through the courtesy of the Municipal Tuberculosis Sanitarium of Chicago.

A special exhibit was arranged by the Registry of Medical Technology of The American Society of Clinical Pathology of Muncie, Indiana. This exhibit consisted of many interesting charts. The main points brought out were: the minimum pre-technical and technical training requirements for registration; the growth of the Registry; distribution of registrants in the armed forces and civil service; data concerning the approved schools; and a comparison of average yearly salaries of registered Medical Technologists between 1942 and 1944.

This latter chart follows:

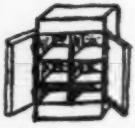
	1942	1944	No. Technologists
With Board	$1,323	$1,704	23
With Board and Room	1,219	1,556	26
Without Board or Room	1,945	1,868	142

The following is a comparison of the yearly salaries offered in advertisements in the Journal of the American Medical Association between 1942 and 1944:

Spring 1942—Average offered $1,680
Spring 1944—Average offered 2,280

A balance is a gadget that we use
to weigh each "vac";

A centrifuge then spins the blood so
cells will tightly pack

An icebox  filled with stock assures
that urgent calls are met.

We'd like
to show
these to you
but - - -

SUCH THINGS ARE HARD TO GET !

(We couldn't even BORROW 'em, but you
may look at the pictures!)

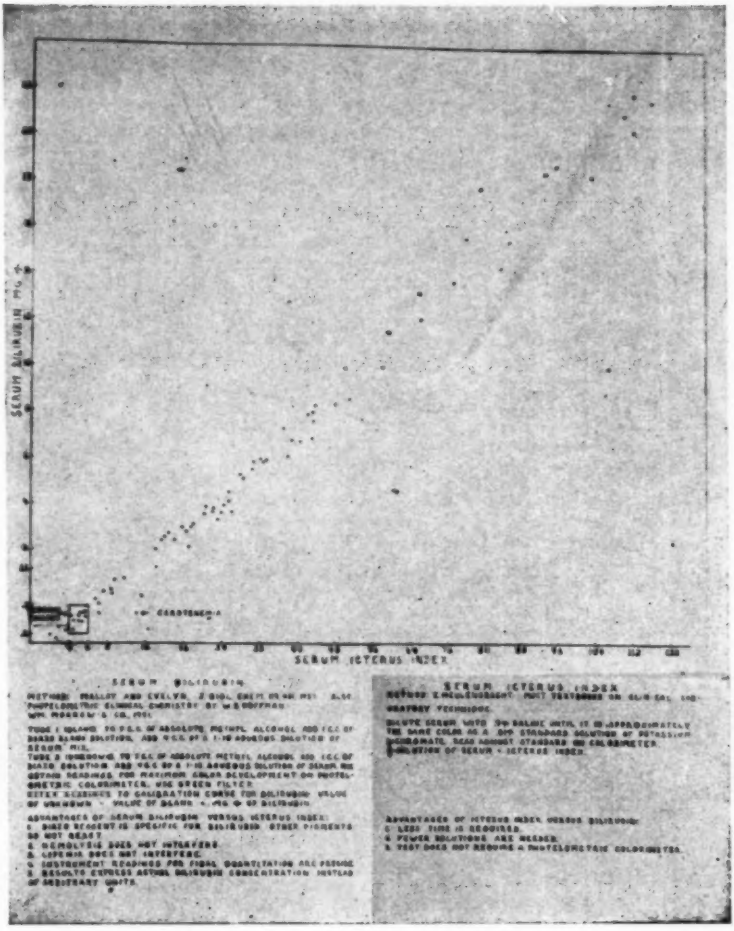


CHART 1

Graph showing correlation between Serum Icterus Index and Serum Bilirubin

CAT BITE AND SCRATCH WOUNDS WITH CONSEQUENT PASTEURELLA INFECTION OF MAN

G.H. HANSMANN, M.D. and MARION TULLY, M.T
DEPARTMENTS of LABORATORY MEDICINE, COLUMBIA and MILWAUKEE CHILDREN'S HOSPITALS
MILWAUKEE, WISCONSIN

PATIENT	CAT	WOUND	LAB. STUDY	CLINICAL NOTES	ORGANISM ISOLATED	BIOCHEMICAL CHARACTERISTICS	IMMUNOLOGICAL STUDIES	PATHOGENICITY STUDIES	COMMENT
X1 male 47 yrs. old	Pet cat had been closely confined since a kitten — appeared healthy	Bite was inflicted at right wrist on thumb side small punctate holes — extremely painful — required sedatives — swelling of arm + hand 3cm area of extreme erythema — temperature, pulse and respiration were normal	Blood (on admission) WBC 5,810,000 WBC 12,850 14,000 (later) P 74% (75%) L 18 M 3 B 1 (on discharge) WBC 5,730,000 WBC 8,150 URINE NORMAL	Last dressings applied — neoprontosil given — sterile cotton and morphine given for control of pain — diathermy treatments daily — a small abscess formed after 9 days — an idolent ulcer resulted took 3 mos. for full function of the hand to return	Very small coccobacillary forms — gram negative — nonmotile — colonies small, white, elevated, smooth, glistening — aggregations a millimeter to two millimeters in diameter with entire margins — growth was enhanced about 50% by the addition of blood to the medium — non hemolytic	Biochemical characteristics of pasteurella avicida and of pasteurella from airways of cats and from wounds of the human inflicted by cats DIBLY NO DEXTROSE LACTOSE SACCHAROSE MANNITOL XYLOSE ARABINOSE GALACTOSE MALTOSE SALICIN DULCITOL DEXTRIN INULIN RAFFINOSE HEMOLYSIS INDOL LEAD ACETATE GELATIN LITMUS MILK X, X1 X2 - pasteurella organisms isolated by authors, + - action - - no action blank - no record Action - acid only on carbohydrate mediums	Serum from host, drawn about one month after onset of infection, failed to agglutinate the organism isolated — It was agglutinated by serum produced by Dr. James Forrester of the U. of PA with a strain of pasteurella avicida — An immune serum produced with this organism agglutinated it in dil. of 1:200 — This immune serum also agglutinated the other two strains here isolated — The serum failed to agglutinate strains of Brucella suis, Pasteurella tularense, E. typhosus, S paratyphosus A+B and several strains of pasteurella obtained from Rosenbusch and Merchant — The serum did not agglutinate a strain of influenza, identified with specific serum or P. pseudotuberculosis.	Guinea Pigs Inoc. intraperitoneally with a 24 hr. culture 1.0cc to 0.25cc inoc. Died of diffuse peritonitis. Exudate in peritoneal cavity. Attended with abundant fibrin and turbid fluid. Liver and spleen markedly injured. 1cc caused death in 16 hrs. 0.25cc caused death in 108 days. Subcutaneous inoc. caused local abscess which healed. No residual path. noted after six weeks. MICE Inoc. intraperitoneally with 0.5cc of 24 hr. cult. Died 48 hrs. Later Diffuse peritonitis RABBITS Inoc. intraperitoneally with a 24hr culture. 0.5cc caused death - 48hrs. 1.5cc caused death - 12 hrs. 2.0cc intravenously causes death - 18 hrs. 1.0cc into trachea caused death - 17 hrs. Histological features similar to those in guinea pig.	Whether or not the organism is a harmless parasite in the throat of cats or whether it is a precursor of a cat that has recovered from an infection carrying the organism is not yet clear. It is distinctly pathogenic when inoculated into animals and it has
Same patient 6 months later	same pet cat	left hand symptoms less severe		same, not as severe	similar organism isolated		Same	Same	
2y female 4 yrs. old	pet cat appeared healthy	Scratched on face and left arm — small superficial not painful — scabs pulled — reddened and disappeared			similar organism isolated			Avirulent for animals	

CHART 2

From Bacteriology Exhibit

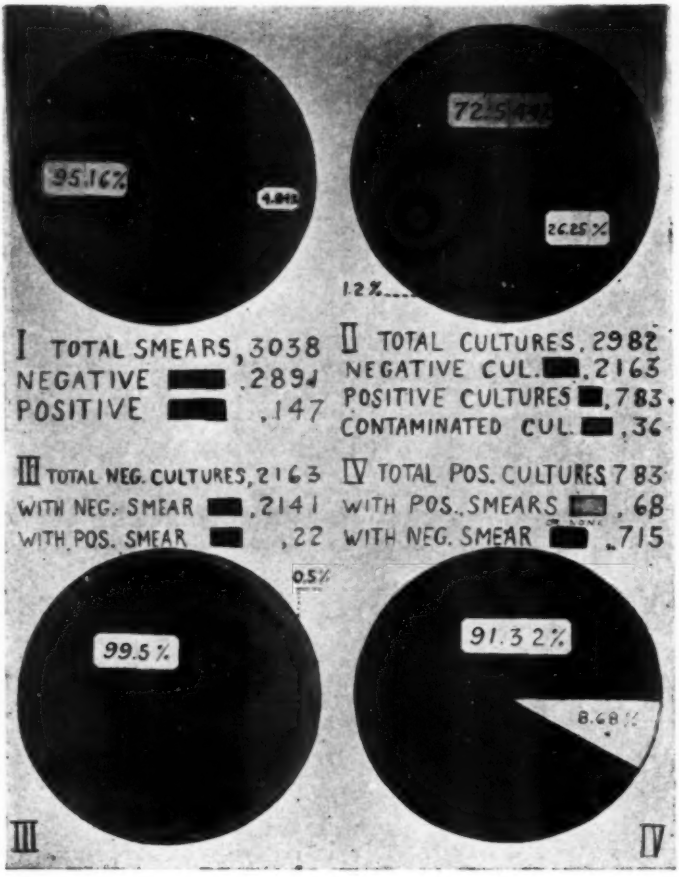


CHART 3

Showing distribution of positive tubercle bacillus of Gastric Aspiration Cultures

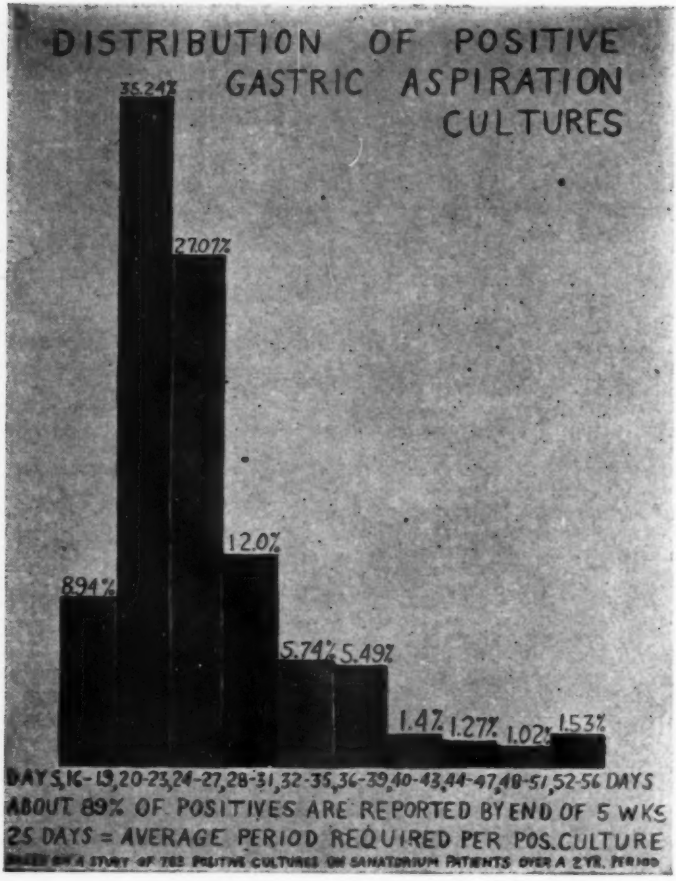


CHART 4

Showing distribution of positive tubercle bacillus of Gastric Aspiration Cultures

TECHNICAL EXHIBITORS

Difco Laboratory, Inc.....Detroit, Michigan
Central Scientific Company.....Chicago, Illinois
A. S. Aloe Company.....St. Louis, Missouri
Kimble Glass Company.....Vineland, New Jersey
Lederle Laboratory, Inc.....New York, N. Y.
E. H. Sargent & Company.....Chicago, Illinois
Medical Bureau.....Chicago, Illinois
Denver Chemical Company.....New York, N. Y.
Effervescent Products Co., Inc.....Elkhart, Indiana
Aznoe's Woodward Medical Personnel Bureau.....Chicago, Ill.
Medco Products Company.....Park Ridge, Illinois

The following did not exhibit, but were kind enough to contribute space:

Arthur H. Thomas Company.....Philadelphia, Pennsylvania
Technicon Company.....New York, N. Y.

Many thanks to all who took part in this successful convention.

Cecelia M. Kortuem, R.N., M.T. (ASCP)

ABSTRACTS

ESTIMATION OF PLATELET FRAGILITY: M. E. Muhrer, R. Bogart and A. G. Hogan, Am. Jr. Physiol., vol. 141, No. 4, June '44, pp. 449.

The method described is a modification of the Sanford method for erythrocyte fragility. A series of 10 tubes is set up, each containing 0.75 ml. NaCl solution but varying in NaCl concentration in the following percentages: 0.0, 0.3, 0.5, 0.7, 0.8, 0.9, 1.2, 1.5, 2.0 and 2.5%. A centrifuge tube is parafined and cooled. 2 ml. 3.8% trisodium citrate are put into it and 8 ml. freshly drawn blood are added. The tube is kept in an ice bath until centrifuged. It is centrifuged at 1000 R.P.M. for 8 minutes. This should be completed in less than 30 minutes from the drawing of the blood. 0.25 ml. plasma and 0.1 ml. of a 2.5% calcium chloride ($CaCl_2 .2H_2O$) is added to each tube. Tubes are mixed by shaking. They are tilted every 30 seconds and the coagulation time noted.

This technique showed that the coagulation time of platelet-containing plasma was markedly reduced as hypotonic salt solution was added but that at the lower salt concentrations, plasma from bleeders coagulated as rapidly as the normal. This was taken as an indication that on disintegration, bleeder platelets release as much thromboplastin as normal platelets but that they do not disintegrate until a lower salt concentration is reached.

THE GASTRIC EMPTYING TIME OF MAN AT HIGH AND NORMAL ENVIRONMENTAL TEMPERATURES: A. Henschel, H. L. Taylor and A. Keys, Am. Jr. Physiol. vol. 141, No. 2, April '44, pp. 205.

Since decreased appetite is frequently observed in hot weather, this work was undertaken to determine whether this might be due to decreased gastric motility. Seventeen normal young men 18-28 years of age were given barium meals and observed by X-ray and fluoroscope. The tests were carried out under the same conditions

at intervals of 4 to 7 days. The first were at 77° F, the second at 120° F. and the third at 77° F.

In all but one the stomach emptied faster at the higher temperature. Observations were also made on 100 normal men doing hard work at 120° F. Except where actual heat exhaustion occurred, there was no indication of decreased gastric activity or loss of appetite.

HYPOGLYCEMIC REACTION WITH CONVULSIONS IN ASCARIASIS (CASE REPORT): L. L. Frank, Am. Jr. Dig. Dis., vol. 11, No. 6, June '44, pp. 195.

This boy of 9 years had a craving for food all the time and when this could not be satisfied at once, he turned pale. Just before his admission to the hospital he developed convulsions following such an episode. His fasting blood sugar was 85 mgs.% but before noon dropped to 50 mg.%. While under observation, the boy passed six ascaris. His blood sugar returned to normal and was known to have remained normal for several months. He gained weight and had no recurrence of the convulsions.

A STUDY OF THE INCIDENCE AND TREATMENT OF INTESTINAL PARASITES IN SOUTHEASTERN KENTUCKY: W. C. Bailey, Sou. Med. Jr., vol. 37, No. 7, pp. 407.

Climatic conditions in the mountainous regions reported are ideal for the survival of parasites in the soil. Much shade and damp soil plus poor sanitary conditions helps to keep the parasites plentiful. Statistics quoted show that 65-90% of the ova in soil of this type have been observed to hatch.

Ascaris lumbricoides occurred most frequently in children while Trichuris trichiura and Necator americanus were most frequent in adults.

SIGNIFICANCE OF THE NITROGEN LOSS IN THE EXUDATE FROM SURFACE BURNS: J. W. Hirshfeld, H. H. Williams, W. E. Abbott, C. G. Heller and M. A. Pilling, Surg., vol. 15, No. 5, May '44, pp. 766.

Nitrogen balance studies done on patients with severe burns necessitated application of dressings that would be satisfactory for the burn and yet permit accurate analysis for nitrogen of the exudate absorbed from the burned surface. The burned area was

covered with finely woven glass cloth, covered with a thick layer of Cellucotton and wrapped with a vinylite plastic bandage. These were left on 5 days or less, if necessary, and then analyzed by the Kjeldahl method.

The observed nitrogen loss was in proportion to the extent of the burn. It varied from 3.0 to 25.47% of the total nitrogen output and in one case almost equalled the nitrogen intake. The loss in this instance during the first 10 days equalled the nitrogen in 7,100 cc. plasma. Since the nitrogen loss begins shortly after the accident and continues until epithelization is complete, early grafting is desirable in third degree burns.

THYROID DISEASE IN YOUNGSTERS UNDER AGE SIXTEEN. COMMENTS ON A SERIES OF 1,200 CASES: I. Bram, Arch. Ped., vol. 41, No. 6, June '44, pp. 300.

In children of this age the B.M.R. may not reveal the clinical state. Many conditions which in themselves give rise to an abnormal B.M.R. may also simulate goitre. Goitre is not necessarily associated with hypo- or hyperthyroidism. The chief etiological factors involved are heredity, faulty dietetic and hygienic habits, and infections, as well as incapacity of the gland to meet the demands of the rapidly growing body. Treatment is generally medical rather than surgical.

RATE OF SEDIMENTATION OF ERYTHROCYTES IN SICKLE CELL ANEMIA: T. Winsor and G. E. Burch, Arch. Int. Med., vol. 73, No. 1, Jan. '44, pp. 41.

Experiments are described illustrating some of the factors which influence sedimentation rate of patients with sickle cell anemia. The more severe the anemia the slower the rate. This could not be influenced proportionately, however, by artificially increasing the anemia. Blood saturated with oxygen had an accelerated rate while that saturated with carbon dioxide was retarded. Severely anemic blood saturated with carbon dioxide was retarded to 2-3 mm. in 4 or 5 days. Normal blood was only slightly affected by saturation with oxygen or carbon dioxide. Sufficient oxygen to accelerate the rate could be added either by inhalation of pure oxygen or by exposure of the drawn blood to air.

OBSERVATIONS ON THE INHIBITION OF DEVELOPMENT OF SPONTANEOUS LEUKEMIA IN MICE BY UNDERFEEDING: J. A. Saxton, M. C. Boon and J. Furth, Cancer Res., vol. 4, No. 7, July '44, pp. 401.

The AK strain of mice in which the incidence of lymphoid leukemia is very high was used. One hundred mice were given normal rations and 79 related mice were given the same diet but in smaller amount. Bioassays of the control group showed malignant lymphocytes at 7 to 13 months while in the underfed group they appeared at 14, 16 and 17 months. In the control group 65% developed leukemia while in the underfed group the incidence was only 10.1%. The underfed mice also lived longer than the control group.

A NEW TEST FOR GASTRIC FUNCTION: J. Nasio, Am. Jr. Diges. Dis., vol. 11, No. 7, July '44, pp. 227.

The gastric stimulant employed was the hydrochloride of 2-Bencil 4-5 imidazoline, a compound registered by Ciba under the trade name of "Priscol." This may be given through the gastric tube in solution of 300 cc. distilled water or injected parenterally.

A chart is given showing the acidity responses obtained in various conditions. Maximum acidity generally was reached at 60-90 minutes after administration. Free HCl values ranged from 0 to 115 cc. N/10 NaOH with 30 to 60 values the most frequent.

The author reports the secretion obtained as superior in quantity and quality to that obtained by Erhmann's food test or by caffeine and very similar to that obtained by histamine without the disturbances associated with administration of histamine.

BOOK REVIEWS

A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY: By D. Wright Wilson. Benjamin Rush, Professor of Physiological Chemistry, University of Pennsylvania. 5th Edition, The Williams & Wilkins Company, Baltimore, Md. Pp. 267, 1944. Price $2.50.

The first edition of this teaching manual of physiological chemistry appeared in 1928 and with the current revision reaches its fifth edition.

In the present form it consists of two parts, the introductory section of over 80 pages describes technics and tests for inorganic substances, standard acid and alkali, colloids, alcohols, aldehydes, fats, protein, carbohydrates and electrolytic dissociation.

The major part of text designated "Part Two" describes tests and standards for body tissues and fluids. Both qualitative and quantitative methods are given for some constituents, such as for gastric acids, along with colorimetry when the latter is applicable. There are interspersed directions for making essential reagents and explanatory data relating to chemical reactions involved in many of the important procedures.

In concluding the volume a table of logarithms and an abridged table of atomic weights are given to be followed by an adequate index to the subject matter.

PRACTICAL METHODS IN BIOCHEMISTRY: By Frederick C. Koch, Frank P. Hixon, Distinguished Service Professor Emeritus of Biochemistry, University of Chicago, Director of Biochemical Research, Armour & Company, Chicago, and Martin E. Hanke, Associate Professor of Biochemistry, University of Chicago. The Williams & Wilkins Company, Baltimore, 1943. Pp. 353. $2.25.

The fourth edition of this manual of practical methods in biochemistry offers several important additions. In the chapter on

proteins simpler quantitative methods for amino acids have been inserted. Further, in another section hydrogen ion concentration has been elaborated and in blood analysis improved methods for colorimetric estimation of amino nitrogen and cholesterol have been described. Distinct additions are chapters on colorimetric estimations of vitamins and color reactions of hormones.

The design of the book is to emphasize the fundamentals of biochemistry and demonstrate methods of quantitative manipulations in order to insure accuracy of results. The procedures covered are believed by the authors to be accurate, practical and rapid. The student has an additional aid in an appendix embracing instructions for using reagents, preventing accidents, care of apparatus, and many other practical features relating to the conduct of laboratory procedures.

This volume will be useful in all laboratories to technician, student and practitioner. It is well indexed, logically arranged and full of the essentials of biochemistry.

STATE AND LOCAL SOCIETIES

COLORADO

The Colorado Society of Medical Technologists held their regular monthly meeting October 5th at the University of Colorado School of Medicine. Fifty medical technologists attended.

Elizabeth O'Toole and Mabel Stewart reported the June convention of the American Society of Medical Technologists and our sponsor, Doctor E. R. Mugrage, presented an illustrated talk on his recent trip to Central America.

The November meeting will include a program on Mycology presented by army personnel from Fitzsimons General Hospital.

PHILADELPHIA, PENNA.

Our meeting date is the second Monday in every month. The first for this year will be on Monday, October 9th, the program for which will be as follows:

"Rh and Abnorman Agglutinins," Dr. John Howard, Miseracordia Hospital, Philadelphia, Pa.

"Comparative Study of Guinea Pig Inoculation versus Cultures for Mycobacterium Tuberculosis," Dr. John Bauer, Pennsylvania Hospital, 8th and Spruce Streets, Philadelphia, Penna.

Also report of delegates from the Convention of the American Society of Medical Technologists, Chicago, June, 1944.

For the November meeting we are planning a banquet, with special guest speakers.

WISCONSIN

The semi-annual meeting of the Wisconsin Association of Medical Technologists was held Saturday, Sept. 30, at the Plankinton House, Milwaukee, and Sunday, Oct. 1, at the Milwaukee County Hospital.

A total of ninety-three medical technologists attended the scien-

tific program during which Lt. Joseph Furlong, M.C. of U.S.N.R. described his recent experiences in the tropics; Dr. John Grill, F.A.C.P. of Marquette University medical school, presented an outline of parasitology and Dr. Philip Cohen of the University of Wisconsin, spoke on aspects of protein metabolism in disease.

A problem clinic was conducted for the benefit of members wishing technical advice. Grace Ballard, of Mt. Sinai Hospital, and Margaret Perry, of Columbia, responded to inquiries about chemistry; Marion Tully, of Columbia Hospital, about bacteriology; Estelle Downer, of Milwaukee County Hospital, and Doris Braun, of Mt. Sinai Hospital, about haematology and Hedwig Koepka, of Columbia Hospital, about tissues.

The W.A.M.T. collection of bone-marrow slides and posters on various subjects which had been exhibited at the annual convention of the A.S.M.T. in Chicago, June 10-12, 1944, was again on display for the benefit of members who had been unable to attend the national convention.

Sixty-five members and guests attended the dinner in the skyroom of the Plankinton House. Dr. Edgar End, assistant professor of physiology, Marquette University, was the speaker.

Sunday breakfast at Milwaukee County Hospital was followed by a talk on the history, mechanism and practical application of the Rh. factor by Dr. Jack Klieger, resident at Milwaukee County Hospital, and a description of the work of the Milwaukee County Cancer Clinic by Dr. James Garland.

The convention concluded with the business session, at which the following officers were chosen:

President.....Sr. M. Corona Rohlik, LaCrosse
President-Elect.....Ethel Trenary, Madison
Secretary.....Sylvia Anderson, Milwaukee
Treasurer.....Hedwig Koepke, Milwaukee

Board of Directors: Sr. M. Claudia Reinwald, Superior; Sr. M. Antila Mosch, Oshkosh; Elizabeth Kullmann, Milwaukee; Delphine Goyette, LaCrosse; Alice Thorngate, Madison; Mrs. Violet Custer, Marshfield.

The Indianapolis Society of Medical Technologists are responding favorably to the suggestion that their society join the American Society of Medical Technologists. The following is a list of the activities for the past year:

September—"Laboratory Diagnosis of Tuberculosis," Dr. Lester Hoyt, Pathologist, Methodist Hospital, Indianapolis, Indiana.

October—"Laboratory Diagnosis of Parasitic Diseases," Helen L. Ward, Ph.D., Associate Parasitologist, Indiana University Medical School.

November—"Medical Photography," Mr. Lester Young, Photographer, Methodist and City Hospitals, Indianapolis, Indiana.

December—Christmas Party. Gifts were presented to Riley Hospital for Children.

January—"Allergy," Dr. Donald J. White, Associate Professor of Bacteriology, Indiana University Medical School.

February—"Technicians' Training in the Army," by Fort Benjamin Harrison Technician's Training School at Joint Meeting with Indianapolis Medical Association.

March—"Toxicology," Dr. R. N. Harger, Professor of Biochemistry and Toxicology, Indiana University Medical School.

April—Social meeting.

May—"Non-Technical Errors in Laboratory Work," Dr. T. Bl. Rice, Acting Director, Indiana State Board of Health.

June—Annual meeting with Review of National Convention of American Society of Medical Technologists and the election of officers for the year 1944-45.

Submitted by Mrs. Fanchion Palmiter, M.T. (ASCP)
c/o Clinical Laboratory
Indiana University Medical Center
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Tidewater Society of Medical Technologists	Mary L. Macon, M.T. 415-17 Medical Arts Bldg. Norfolk, Va.
South Dakota Medical Technologists	Mrs. Carl A. Iverson, M.T. 311 South Yale Street Vermillion, S. D.

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